

REMARKS

Claims 72-79 and 81-86 are pending in this application. Claims 80 has been canceled and its limitations have been incorporated in amended independent claim 72. Claims 72 and 81 have been amended. No new matter has been introduced.

The title of the application has been amended to more clearly describe the subject matter of the claimed invention.

Claims 72-79 and 81-86 stand rejected under 35 U.S.C. §102 (e) as being anticipated by Geusic et al. (U.S. Patent No. 6,582,512) (“Geusic”). This rejection is respectfully traversed.

The claimed invention relates to a solid material having spatial regions arranged in a periodic array. As such, amended independent claim 72 recites a “solid material having spatial regions arranged therein in a predefined pattern, said spatial regions being surrounded by said solid material and providing said solid material with a predetermined energy particle diffraction pattern.” Amended independent claim 72 also recites that the spatial regions comprise “a material different from said solid material, said solid material having a melting temperature higher than the melting temperature of said different material.”

Amended independent claim 81 recites a “semiconductor material having regions arranged within said semiconductor material in a periodic array, said regions being surrounded by said semiconductor material and having different particle diffraction patterns than said semiconductor material without regions.” Amended independent claim 81 also recites that the regions comprise “a solid material different from the material of said semiconductor material.”

Geusic relates to a “method of forming a periodic index of refraction pattern in a superlattice of a solid material to achieve photonic bandgap effects at desired optical

wavelengths.” (Abstract). According to Geusic, “[a] plurality of space group symmetries, including a plurality of empty-spaced buried patterns, are formed by drilling holes in the solid material and annealing the solid material to form empty-spaced patterns of various geometries.” (Abstract).

Geusic fails to anticipate the subject matter of claims 72-79 and 81-86. Geusic does not disclose, teach or suggest a “solid material having spatial regions” that comprise “a material different from said solid material, *said solid material having a melting temperature higher than the melting temperature of said different material,*” as amended independent claim 72 recites (emphasis added). Geusic teaches “a plurality of *empty-spaced* buried patterns” (emphasis added) that are formed by drilling holes in a solid material, and not a comprising “a material different from said solid material, said solid material having a melting temperature higher than the melting temperature of said different material,” as in the claimed invention.

Geusic is also silent about a “semiconductor material having regions arranged . . . in a periodic array, said regions being surrounded by said semiconductor material” and comprising “*a solid material different from the material of said semiconductor material,*” as amended independent claim 81 recites (emphasis added). In Geusic, the plurality of “buried patterns,” which would arguably correspond to the “spatial regions” of the claimed invention, are “empty-spaced” and not comprising “a solid material different from the material of said semiconductor material,” as in the claimed invention. For at least these reasons, the subject matter of claims 72-79 and 81-86 is not anticipated by Geusic, and withdrawal of the rejection of these claims is respectfully requested.

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In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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